TECHNICAL EXHIBIT
APPLICATION FOR FM CONSTRUCTION PERMIT
ROBERT V. CLARK
ARKANSAS CITY, KANSAS
CH 273A 6 KW 74 M

Technical Narrative

The technical exhibit of which this narrative is part was prepared on behalf of Robert V. Clark, applicant for a new FM station on channel 273A in Arkansas City, Kansas. The instant application is filed in response to the filing window (closes July 8, 1991) specified in Mass Media Docket No. 89-477 regarding allotment of channel 273A to Arkansas City, Kansas. By means of this application, the applicant proposes to side-mount a 3-bay FM antenna on an existing tower and operate on channel 273A with effective radiated power of 6.0 kilowatts and antenna height above average terrain of 74 meters.

The proposal would not be subject to environmental processing in accordance with 47 CFR 1.1306. The Federal Aviation Administration has been notified of the proposal. It is believed that the proposal conforms with all applicable rules and regulations of the Federal Communications Commission. Specifications for the proposed operation are included herein as Figure 1.

City. The location is uniquely described by the following geographic coordinates, which were supplied by the applicant:

37° 01' 40" North Latitude

97° 00' 35" West Longitude.

A map showing the transmitter location is included herein as Figure 2. A sketch showing the proposed antenna and supporting structure is included herein as Figure 3.

Allocation Considerations

The proposed site meets the minimum distance separation requirements of 47 CFR 73.207 with respect to all existing and proposed stations and allotments. An allocation study showing the actual and required separations from pertinent stations and allotments is included as Figure 6.

Coverage Contours

The predicted coverage contours were calculated

National Geophysical Data Center's 30-second terrain database.

The antenna radiation center heights above average terrain in the individual radial directions and the effective radiated power were used in conjunction with the F(50,50) curves of 47 CFR 73.333 (Figure 1) to determine distances to the 70 dBu and 60 dBu contours. Figure 4 is a tabulation of [illegible]

60 dBu contour was determined by a computer program which adds the populations of census districts having centroids within the contour. The 1980 census was employed. The land area within the 60 dBu contour was determined using a root mean squared method of calculation. The predicted 60 dBu contour encompasses 1,900 square kilometers in which 34,676 persons reside.

Environmental Considerations

The proposed facility was evaluated in terms of potential radiofrequency radiation exposure at ground level in accordance with OST Bulletin No. 65, "Evaluating Compliance With FCC-Specified Guidelines for Human Exposure to Radiofrequency Radiation." Using Equation (4) on Page 8 of this Bulletin, the "worst-case" power density at ground level attributable to the proposed FM operation is approximately 15 percent of the ANSI standard, well within the ANSI guidelines.

The applicant verifies that access to the tower will be restricted by a fence which will be locked and that appropriate warning signs will be posted. Should it become necessary for workers or other authorized personnel to enter the restricted area and climb the tower, the applicant states that the station power will be reduced or shut down, as appropriate, to insure that no radiofrequency radiation exposure in excess of the ANSI guidelines occurs.

The proposal is categorically excluded from environmental processing, as it appears to meet all of the

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Technical Specifications

Channel	273A
Frequency	102.5 MHz
Site coordinates	37° 01' 40" North Latitude
	97° 00' 35" West Longitude
Site elevation above mean sea level	370.3 m (1215 ft)
Average elevation above mean sea level of standard eight radials, 3-16 kilometers	347.8 m (1141 ft)
Overall height of existing antenna structure	
Above ground	54.9 m (180 ft)
Above mean sea level	425.2 m (1395 ft)
Height of FM antenna radiation center	
Above ground	51.8 m (170 ft)
Above mean sea level	422.1 m (1385 ft)
Above average terrain	74.3 m (244 ft)
Transmitter	*Continental, type 814B
Maximum rated power output	5 kW

*Or equivalent

Technical Specifications
Arkansas City, Kansas

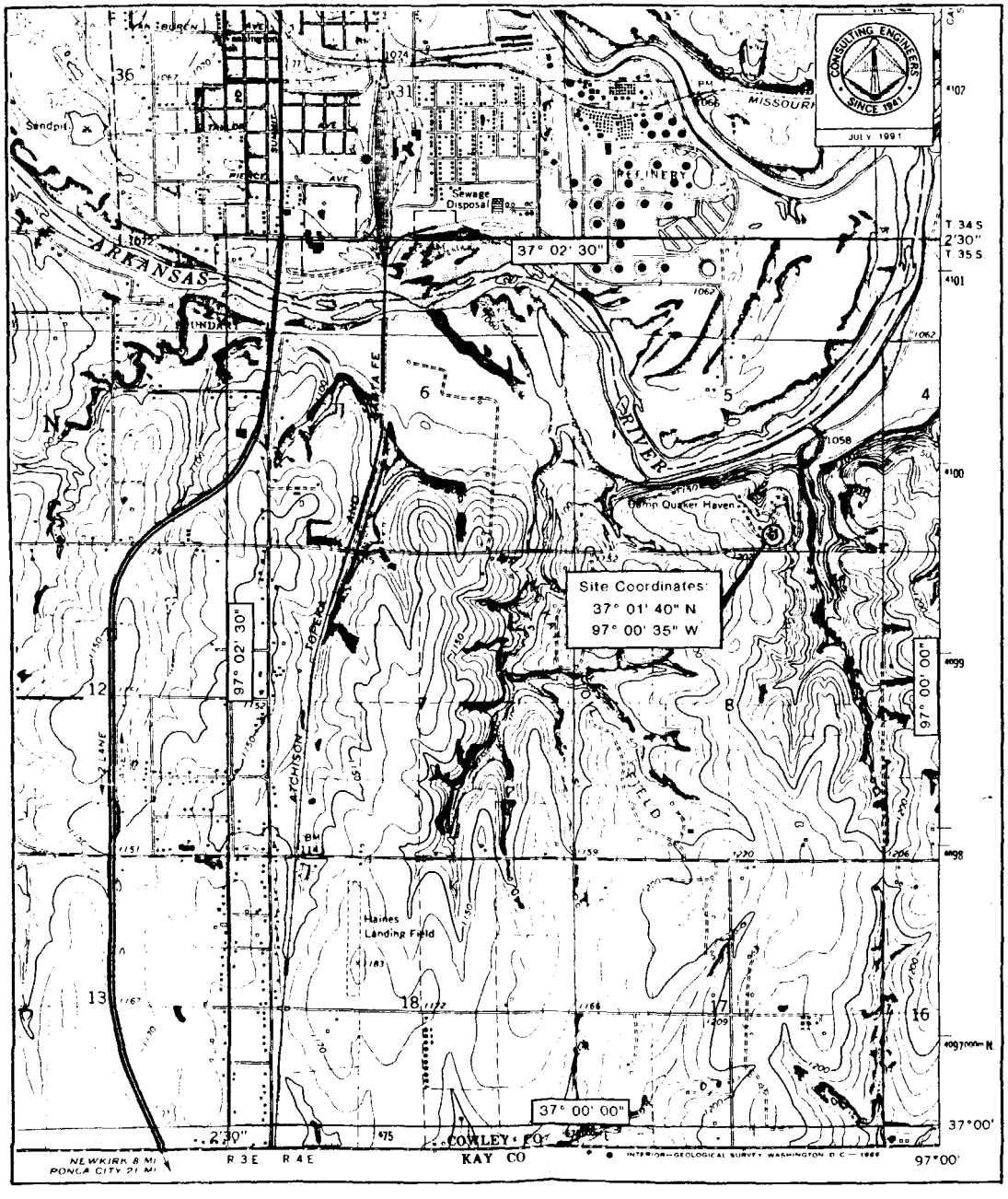
Figure 1
Sheet 2 of 2

Transmission line	*Andrew, type HJ7-50A
Nominal diameter	4.13 cm (1-5/8 in)
Length	61.0 m (200 ft)
Efficiency (0.42 dB loss)	90.8%
Antenna	*Shively, type 6813
Number of bays	3
Input power rating	9 kW
Polarization	Circular
Power gain	
Horizontal polarization	1.55
Vertical polarization	1.55
2 Auxiliary power generators	*Onan
Power rating (60 Hz)	6 kW

Proposed Operation

Transmitter output power	4.26 kW
Transmission line loss	0.39 kW
Antenna input power	3.87 kW
Effective radiated power	
Circular polarization	6.0 kW

*Or equivalent



ARKANSAS CITY, KANS.
N3700—W9700/7.5

1965

AMS 6558 II SE—SERIES V878

SCALE 1:24000

1 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 0 1 KILOMETER

CONTOUR INTERVAL 10 FEET
DOTTED LINES REPRESENT 5 FOOT CONTOURS
DATUM IS MEAN SEA LEVEL

PROPOSED TRANSMITTER LOCATION

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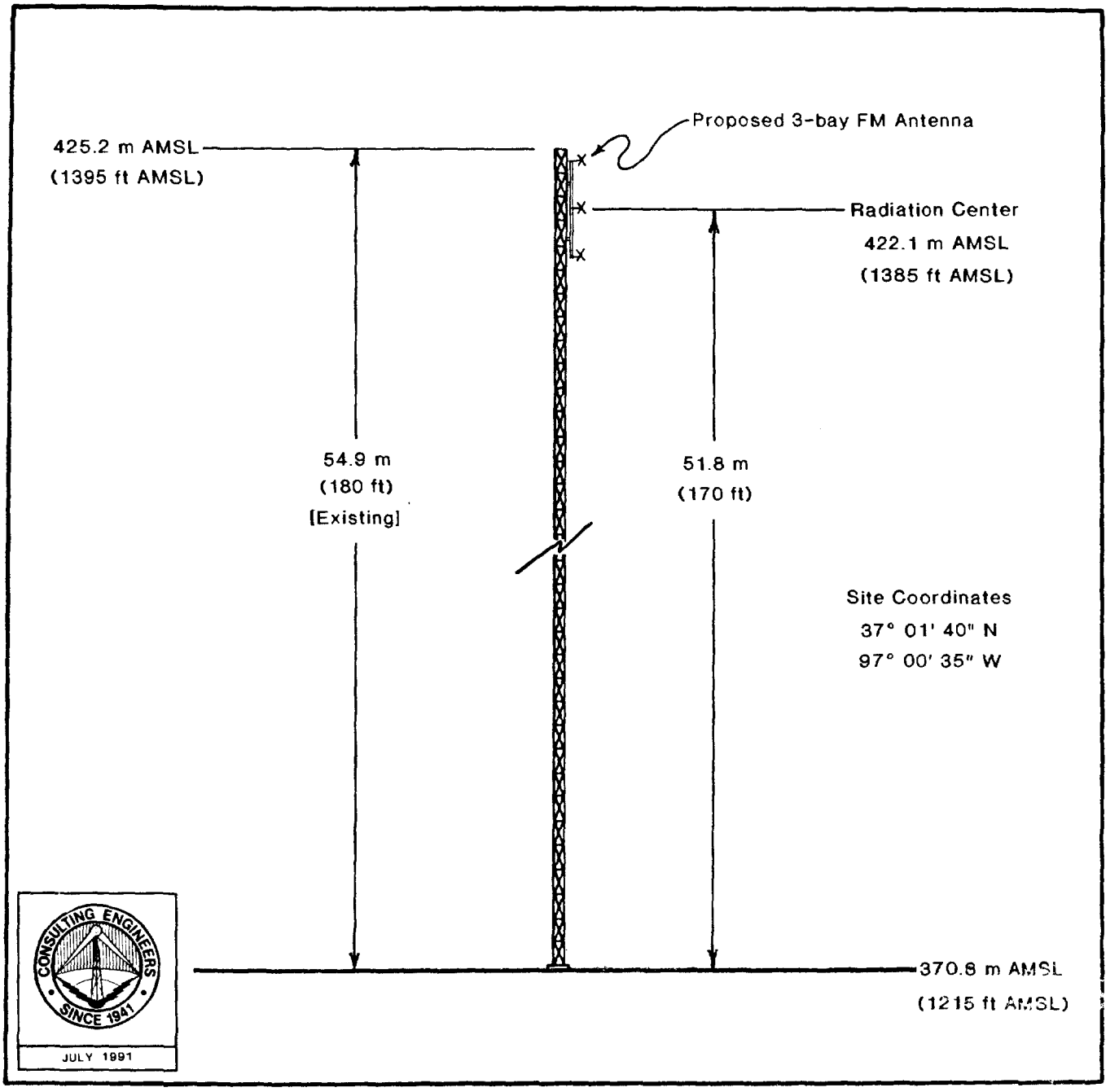
duTreil, Lundin & Rackley, Inc. *Washington, D.C.*

Figure 3



PROPOSED ANTENNA AND SUPPORTING STRUCTURE

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duTreil, Lundin & Rackley, Inc. Washington, D.C.

Figure 4

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Tabulation of Average Elevations
and Distances to Coverage Contours

Radial Bearing (deg. T.)	3-16 Kilometer Average Terrain Elevation (meters AMSL)	Antenna Height Above Average Terrain (meters)	Distance to Contour 70 dBu (km)	Distance to Contour 60 dBu (km)
0	345	77	14.0	25.0
45	358	64	12.9	23.1
90	346	76	14.0	24.9
135	346	76	14.0	24.9
180	344	78	14.1	25.2
225	354	68	13.2	23.7
270	356	66	13.0	23.3
315	333	89	15.1	26.8
326.4*	340	82	14.4	25.7
Average	348	74		

*Radial through Arkansas City - not included in average.

Figure 5

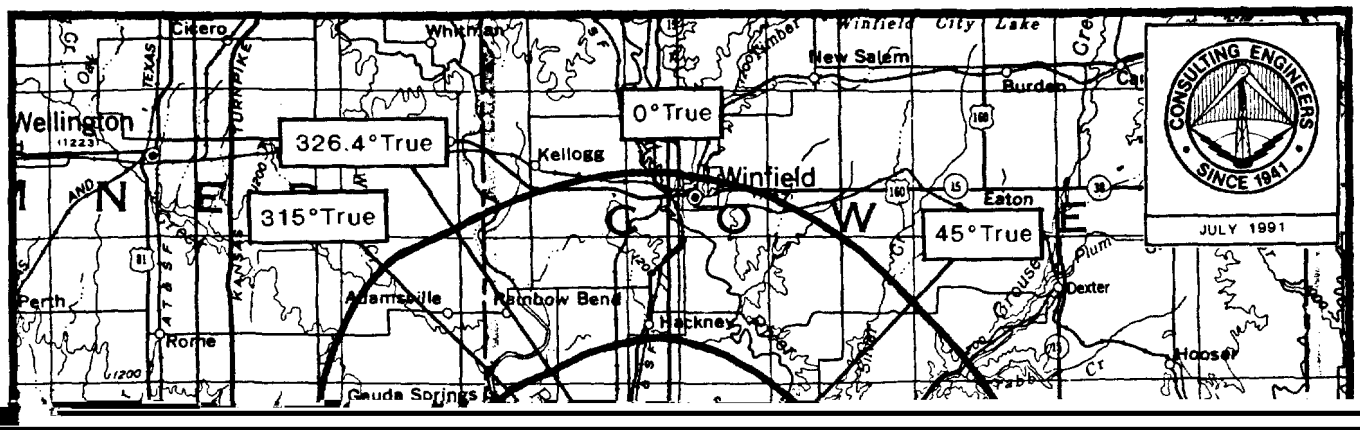
Cikero
Whitman
Winfield City Lake
New Salem
Burden
Wellington
0°True
326.4°True
Kellogg
Winfield
315°True
45°True
Eaton
Dexter
Perth
Adamsville
Rainbow Bend
Hackney
Rome
Hooser
Gauda Springs
CONSULTING ENGINEERS
SINCE 1941
JULY 1991

Figure 6

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Allocation Study

Job Title :Arkansas City, Kansas — Separation Buffer 32 km
FCC DB Date : 05/28/91
Channel 273A (102.5 MHz) — Coordinates : 37-01-40 97-00-35

Call Status	City State	FCC File No.	Channel Freq.	ERP(kW) HAAT(m)	Latitude Longitude	Bearing deg-Tru	Dist. (km)	Req. (km)
KZSNFM	Hutchinson		271C	100.	37-47-47	331.8	97.08	95
LIC	KS	BLH850222KS	102.1	315.0	97-31-59		2.08	CLOSE
KXDJ	North Fort Riley		273C1		38-57-05	4.9	214.33	200
PADD	KS		102.5	.0	96-47-45		14.33	CLOSE
Alternate Site								
KKUZ	Joplin		273C1	100.	37-04-43	87.8	219.71	200
LIC	MO	BLH830624AB	102.5	125.0	94-32-26		19.71	CLEAR
KXDJ	North Fort Riley		273C1		39-00-00	14.9	226.82	200
PADD	KS		102.5	.0	96-20-00		26.82	CLEAR
Counterproposal to RM-7338								
KJYO	Oklahoma City		274C	100. DA	35-32-52	194.8	169.84	165
LIC	OK	BLH890303KC	102.7	300.0	97-29-29		4.84	CLOSE
	Independence		275A		37-15-42	76.3	113.48	31
ALC	KS	Docket90-65	102.9	.0	95-45-59		82.48	CLEAR
Effective 1-22-91-Rsvd for KIND per D90-65								